Fig. 1

Video_object_layer_shape_extension	aux_comp_type[0]	aux_comp_type[1]	aux_comp_type[2]	aux_comp_type_count
0000	ALPHA	NO	NO	1
0001	DISPARITY	NO	NO	1
0010	ALPHA	DISPARITY	NO	2
0011	DISPARITY	DISPARITY	NO	2
0100	ALPHA	DISPARITY	DISPARITY	3
0101	DEPTH	NO	NO	1
0110	ALPHA	DEPTH	NO	2
0111	TEXTURE	NO	NO	1
1000	USER DEFINED	NO	NO	1
1001	USER DEFINED	USER DEFINED	NO	2
1010	USER DEFINED	USER DEFINED	USER DEFINED	3
1011	ALPHA	USER DEFINED	NO	2
1100	ALPHA	USER DEFINED	USER DEFINED	3
1101 – 1111	t.b.d	t.b.d	t.b.d	t.b.d

10/540891
PCT/KR2003/000132

Fig. 2

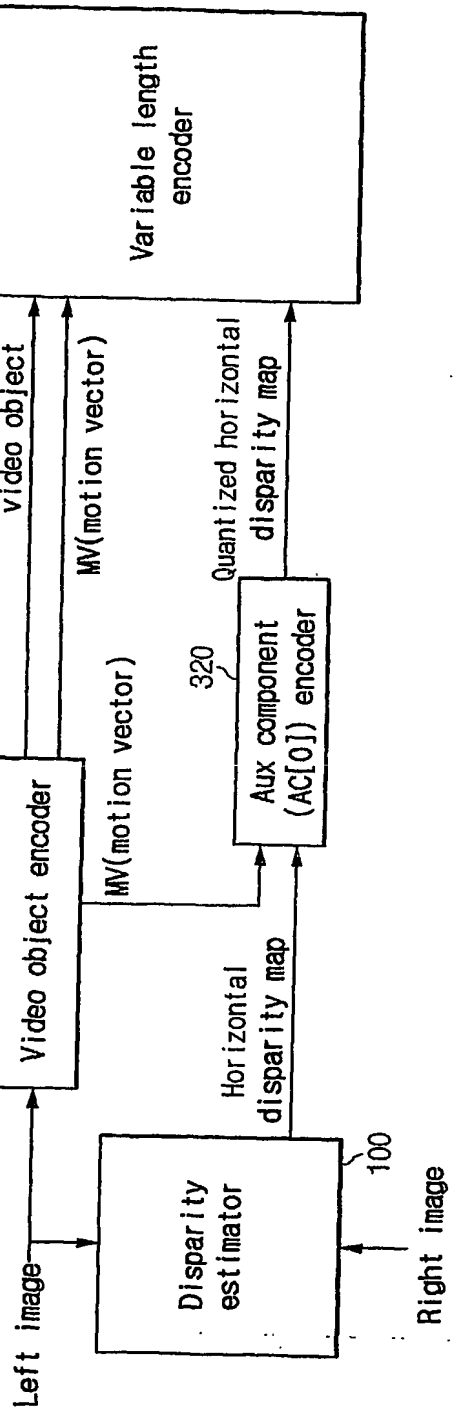


Fig. 3

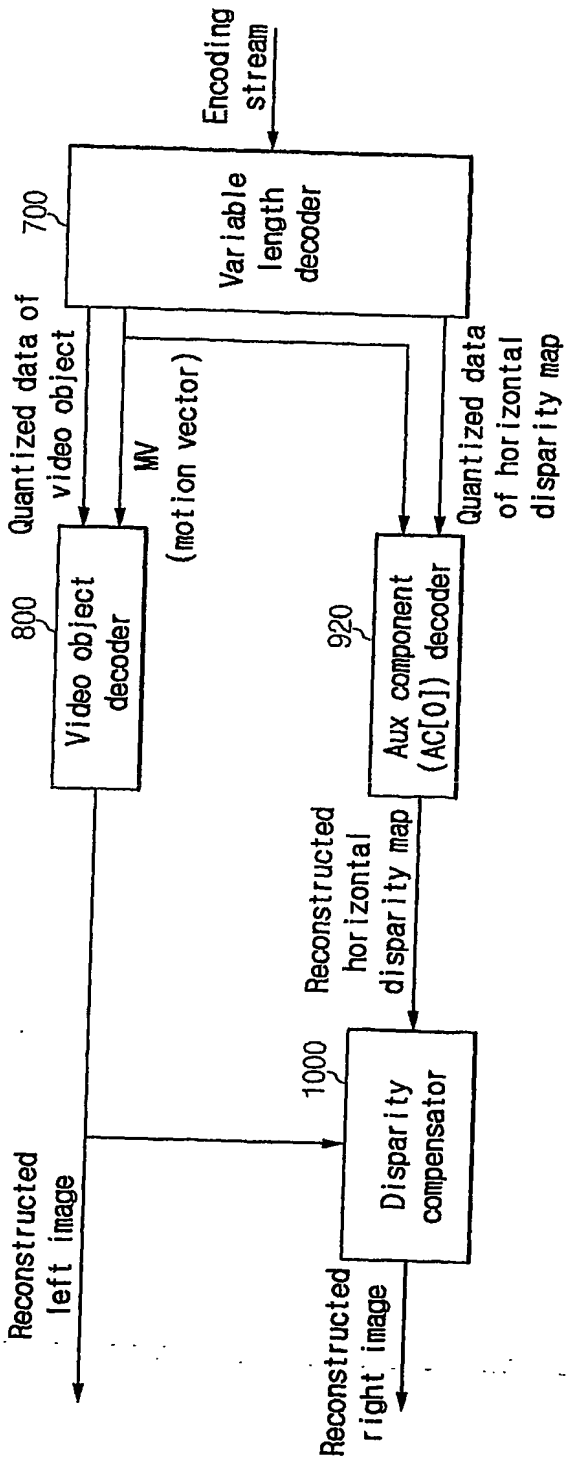

Encoding stream
700
Variable length decoder
Quantized data of video object
MV (motion vector)
Quantized data of horizontal disparity map
800
Video object decoder
920
Aux component (AC[0]) decoder
Reconstructed horizontal disparity map
1000
Disparity compensator
Reconstructed left image
Reconstructed right image

Fig. 4

Video_object_layer_shape_extension	aux_comp_type[0]	aux_comp_type[1]	aux_comp_type[2]	aux_comp_count
1101	Horizontal DISPARITY	Luminance Residual texture	NO	2
1110	Horizontal DISPARITY	Luminance Residual texture	Chrominance Residual texture	3
1111	Horizontal DISPARITY	Vertical DISPARITY	Luminance Residual texture	3

Fig. 5

Video_object_layer_shape_extension	aux_comp_type[0]	aux_comp_type[1]	aux_comp_type[2]	aux_comp_type[3]	aux_comp_count
1010	Horizontal DISPARITY	Vertical DISPARITY	Luminance Residual texture	Chrominance Residual texture	4

Fig. 6

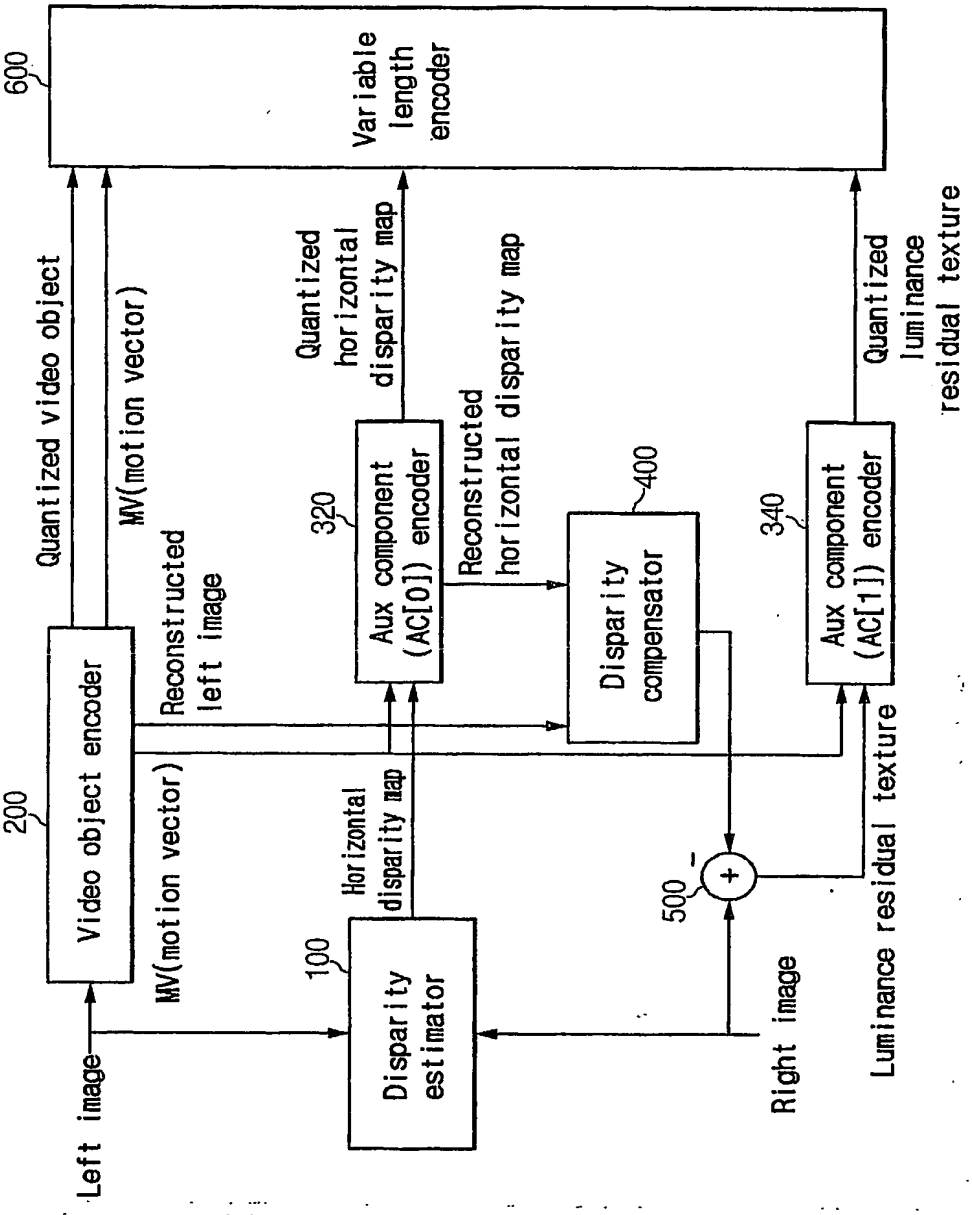

600
Variable length encoder
Quantized video object
MV(motion vector)
Quantized horizontal disparity map
Reconstructed horizontal disparity map
Quantized luminance residual texture
320
Aux component (AC[0]) encoder
400
Disparity compensator
340
Aux component (AC[1]) encoder
Reconstructed left image
200
Video object encoder
MV(motion vector)
Horizontal disparity map
100
Disparity estimator
500
+
-
Left image
Right image
Luminance residual texture

Fig. 7

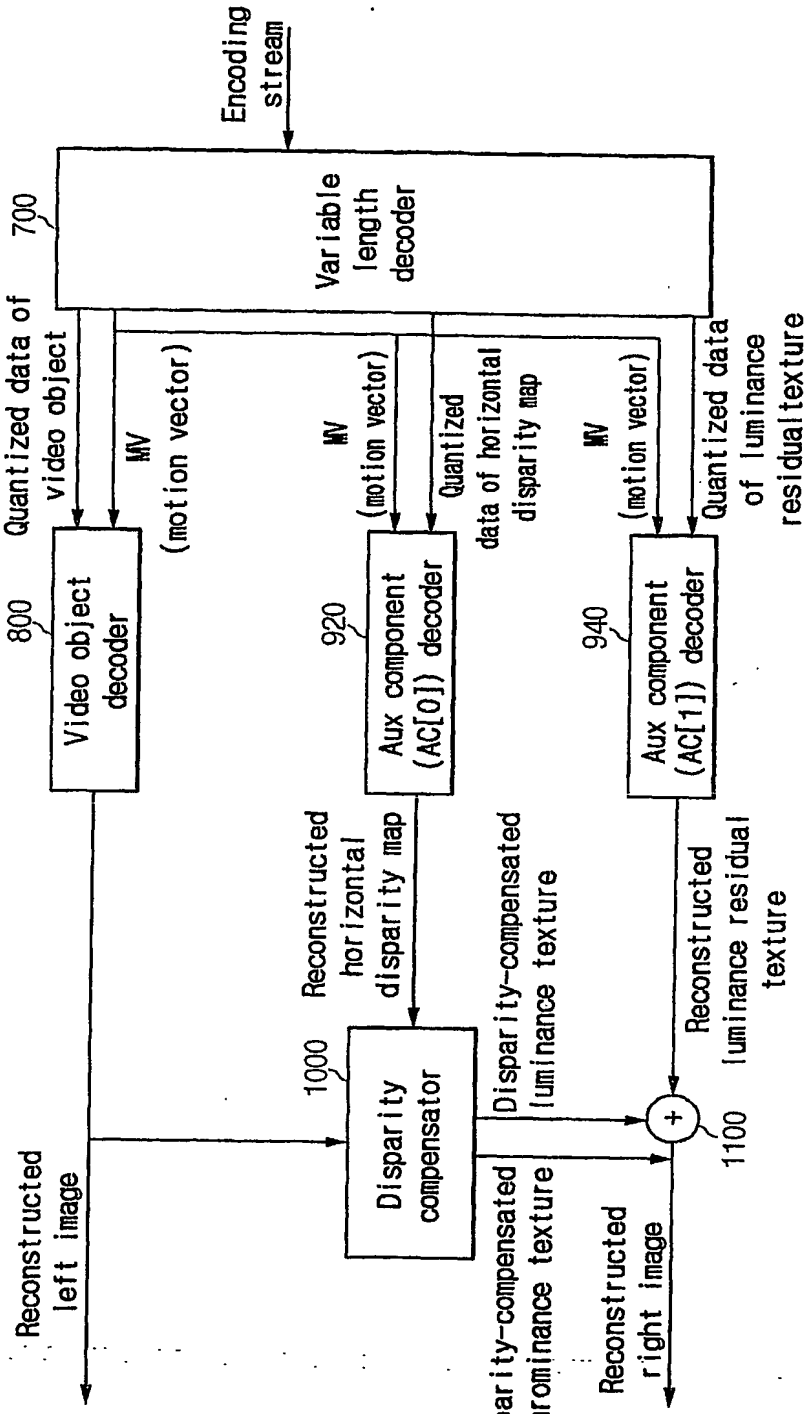
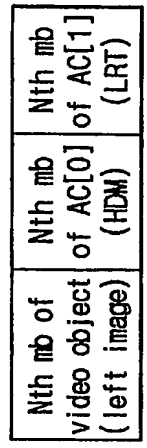
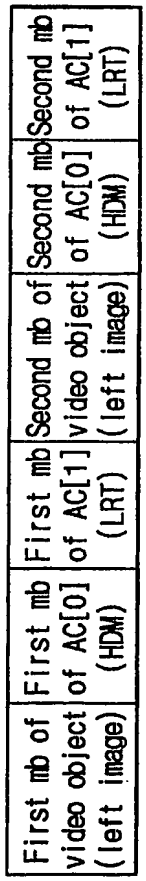

Encoding stream
700
Variable length decoder
Quantized data of video object
MV (motion vector)
MV (motion vector)
Quantized data of horizontal disparity map
MV (motion vector)
Quantized data of luminance residual texture
800
Video object decoder
920
Aux component (AC[0]) decoder
940
Aux component (AC[1]) decoder
Reconstructed horizontal disparity map
Disparity-compensated luminance texture
Reconstructed luminance residual texture
1000
Disparity compensator
1100
+
Reconstructed left image
Disparity-compensated chrominance texture
Reconstructed right image

Fig. 8





-AC: Auxiliary Component
-HDM: Horizontal Disparity Map
-mb: macroblok
-LRT: Luminance Residual Texture

Fig. 9

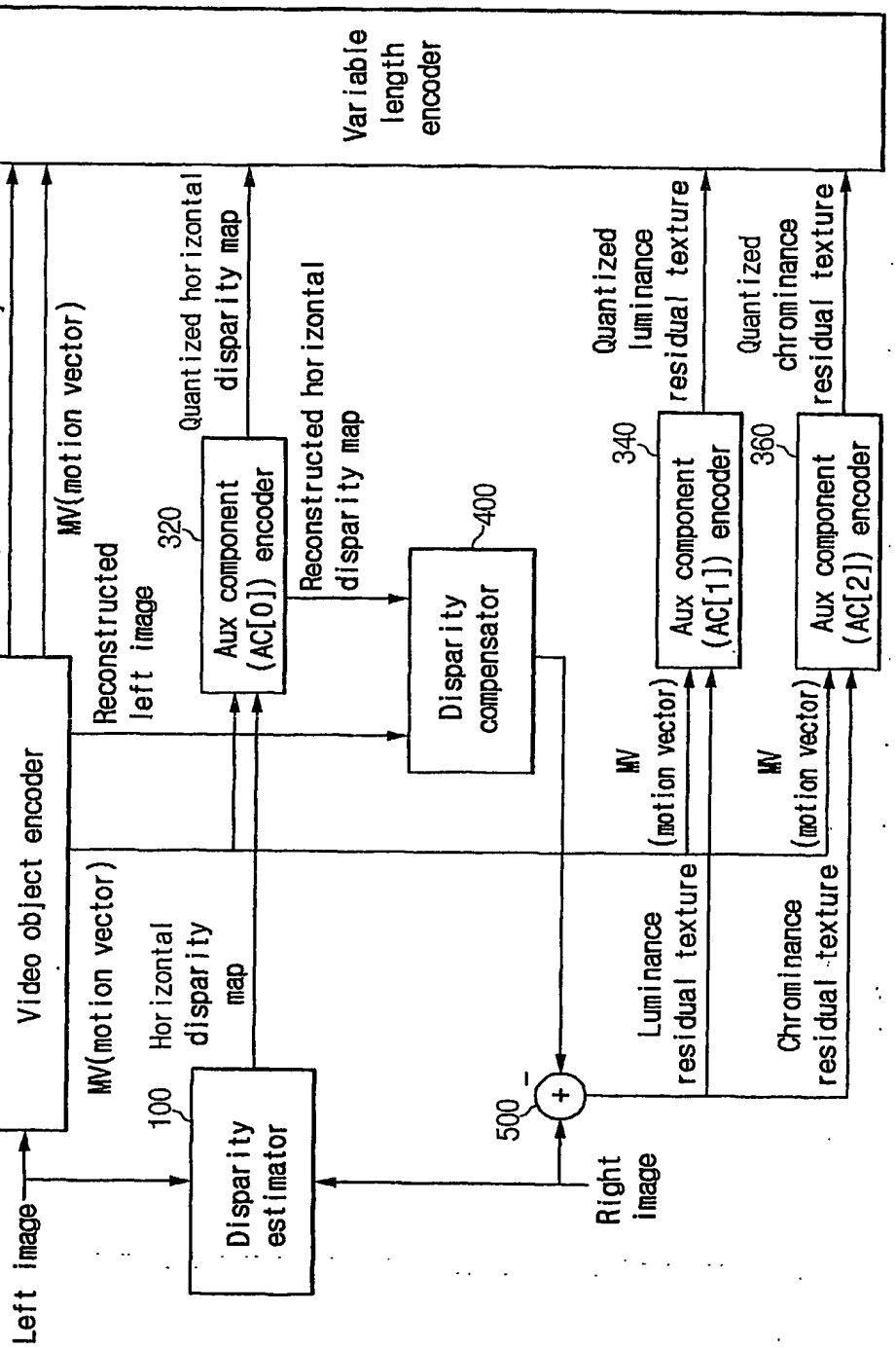

600
Variable length encoder
Quantized video object
MV(motion vector)
Quantized horizontal disparity map
Reconstructed horizontal disparity map
Quantized luminance residual texture
Quantized chrominance residual texture
320
Aux component (AC[0]) encoder
400
Disparity compensator
340
Aux component (AC[1]) encoder
360
Aux component (AC[2]) encoder
200
Video object encoder
Reconstructed left image
MV(motion vector)
Horizontal disparity map
100
Disparity estimator
500
Luminance residual texture
Chrominance residual texture
MV (motion vector)
MV (motion vector)
Left image
Right image

Fig. 10

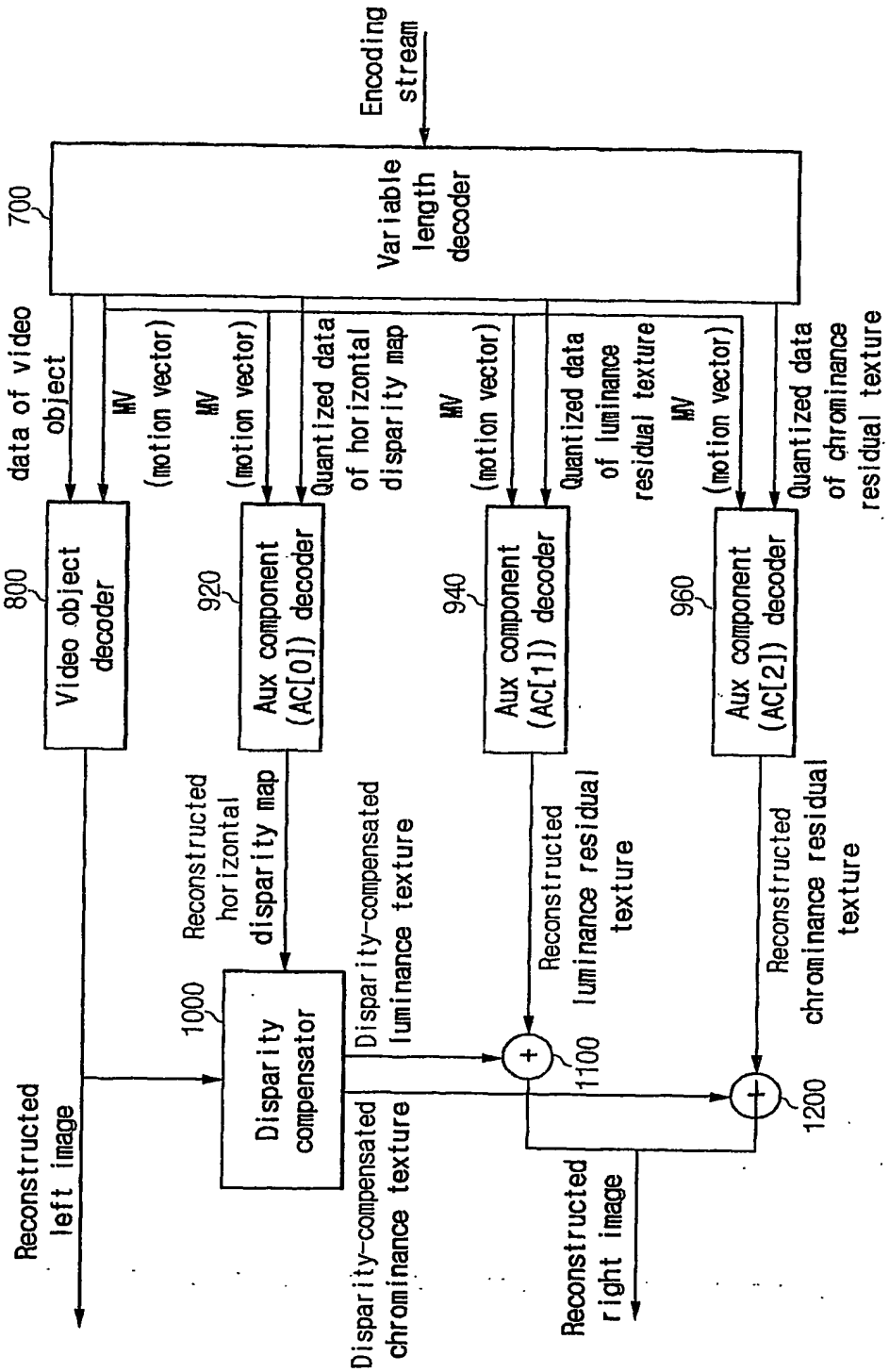

Encoding stream
700
Variable length decoder
Quantized data of video object
MV (motion vector)
MV (motion vector)
Quantized data of horizontal disparity map
MV (motion vector)
Quantized data of luminance residual texture
MV (motion vector)
Quantized data of chrominance residual texture
800
Video object decoder
920
Aux component (AC[0]) decoder
940
Aux component (AC[1]) decoder
960
Aux component (AC[2]) decoder
Reconstructed horizontal disparity map
1000
Disparity compensator
Disparity-compensated luminance texture
Disparity-compensated chrominance texture
1100
Reconstructed luminance residual texture
1200
Reconstructed chrominance residual texture
Reconstructed left image
Reconstructed right image

Fig. 11

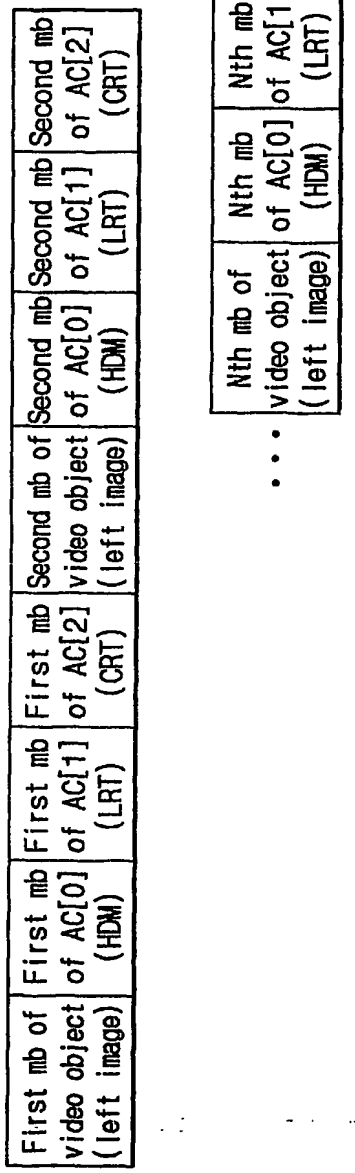

First mb of video object (left image)
First mb of AC[0] (HDM)
First mb of AC[1] (LRT)
First mb of AC[2] (CRT)
Second mb of video object (left image)
Second mb of AC[0] (HDM)
Second mb of AC[1] (LRT)
Second mb of AC[2] (CRT)
Nth mb of video object (left image)
Nth mb of AC[0] (HDM)
Nth mb of AC[1] (LRT)
Nth mb of AC[2] (CRT)
-AC: Auxiliary Component
-HDM: Horizontal Disparity Map
-mb: macroblok
-LRT: Luminance Residual Texture
-CRT: Chrominance Residual Texture

Fig. 12

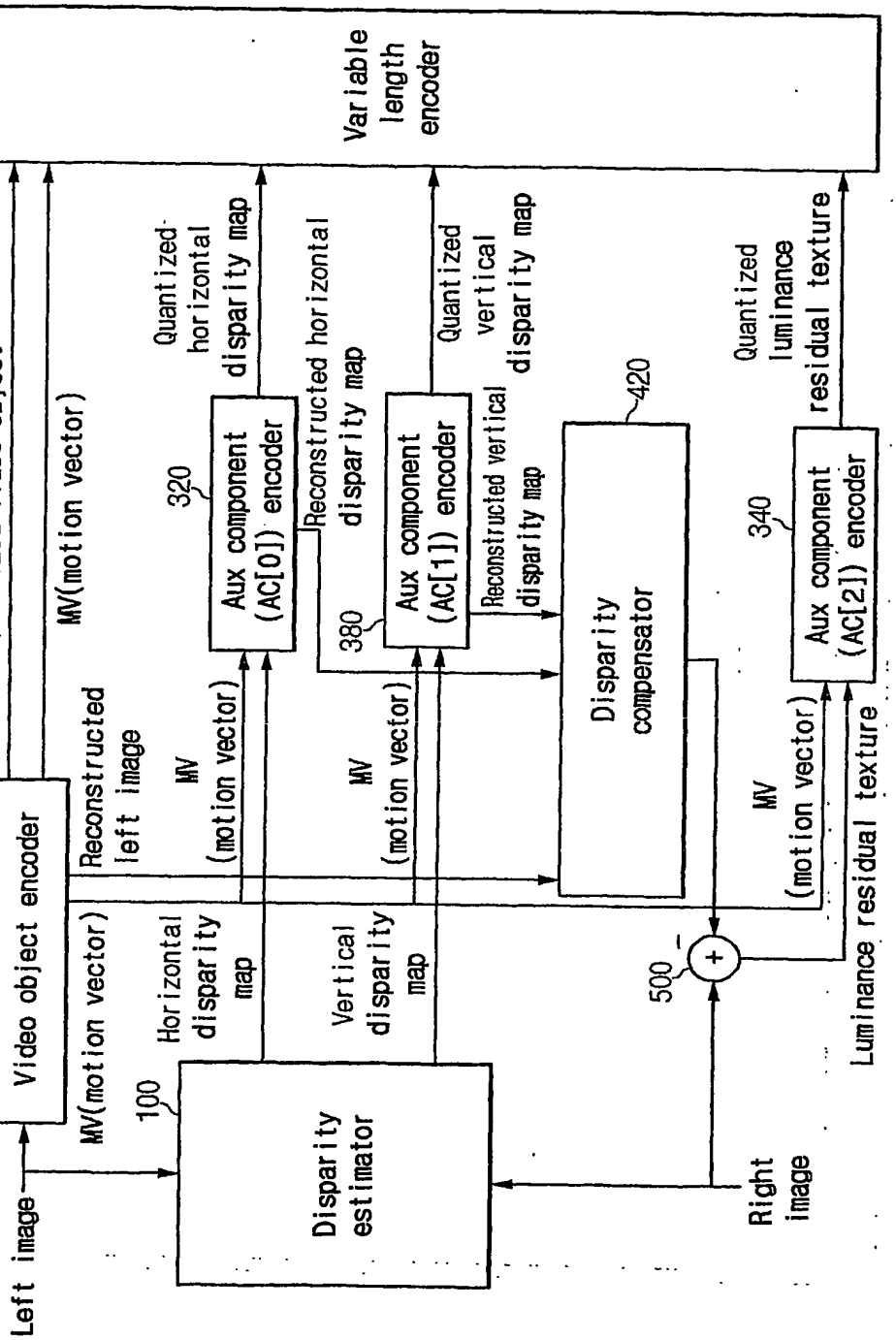

Left image
Right image
Disparity estimator
100
Video object encoder
200
MV(motion vector)
Quantized video object
MV(motion vector)
Reconstructed left image
Horizontal disparity map
Vertical disparity map
MV (motion vector)
MV (motion vector)
MV (motion vector)
Aux component (AC[0]) encoder
320
Aux component (AC[1]) encoder
380
Aux component (AC[2]) encoder
340
Quantized horizontal disparity map
Reconstructed horizontal disparity map
Quantized vertical disparity map
Reconstructed vertical disparity map
Disparity compensator
420
500
Luminance residual texture
Quantized luminance residual texture
Variable length encoder
600

Fig. 13

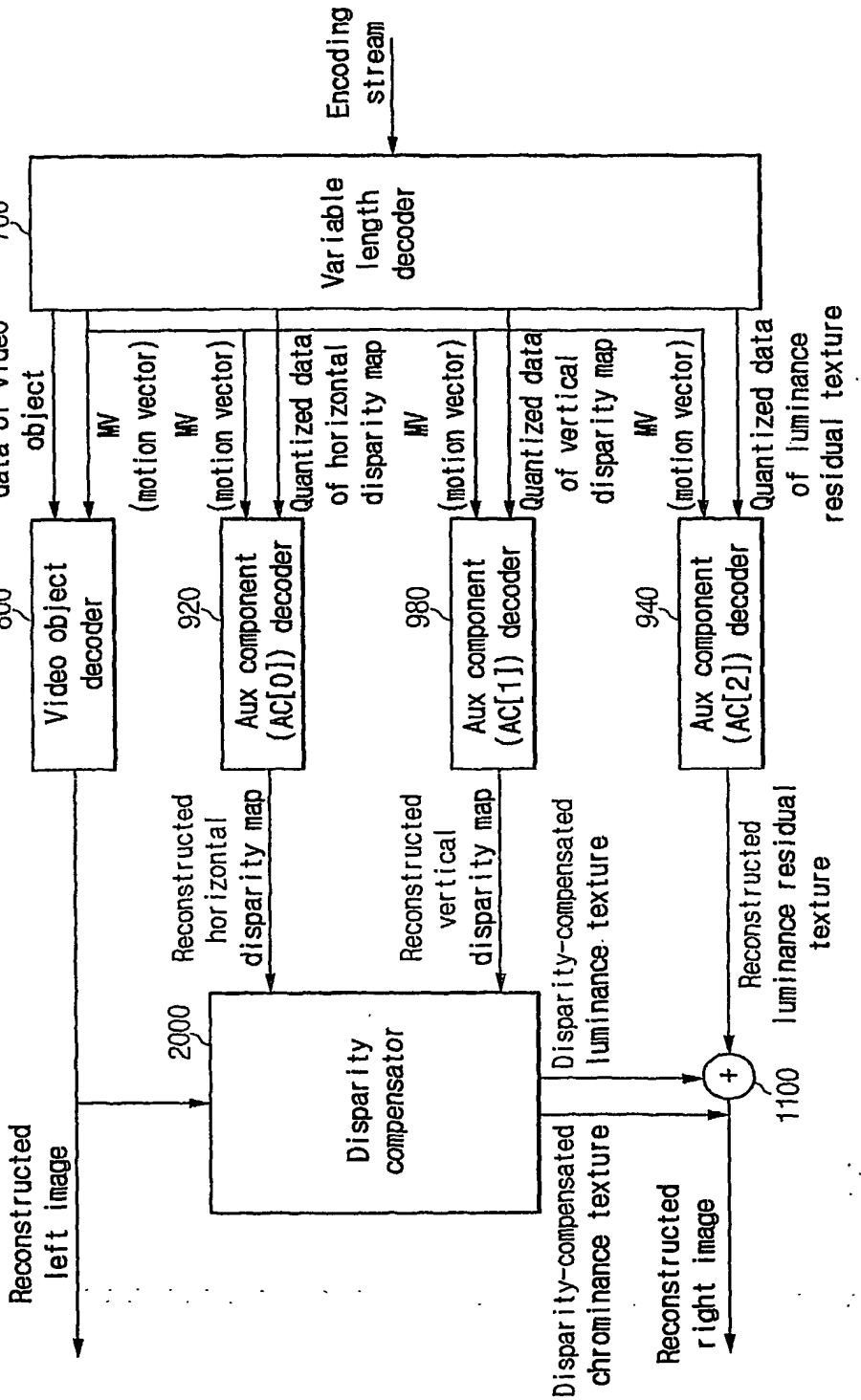

Encoding stream
700
Variable length decoder
Quantized data of video object
MV (motion vector)
Quantized data of horizontal disparity map
MV (motion vector)
Quantized data of vertical disparity map
MV (motion vector)
Quantized data of luminance residual texture
800
Video object decoder
920
Aux component (AC[0]) decoder
980
Aux component (AC[1]) decoder
940
Aux component (AC[2]) decoder
Reconstructed horizontal disparity map
Reconstructed vertical disparity map
Disparity-compensated luminance texture
Reconstructed luminance residual texture
2000
Disparity compensator
1100
Reconstructed left image
Disparity-compensated chrominance texture
Reconstructed right image

Fig. 14

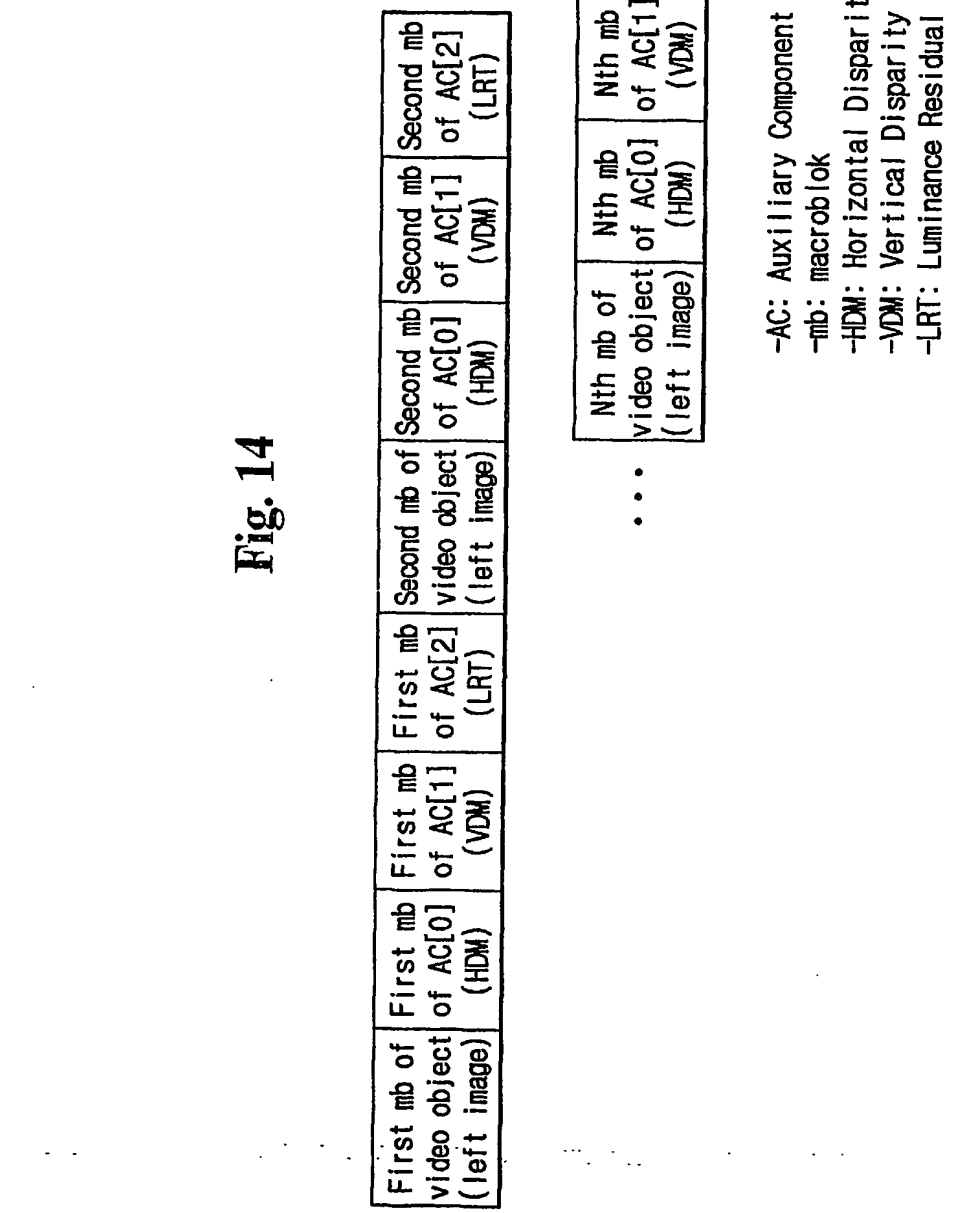
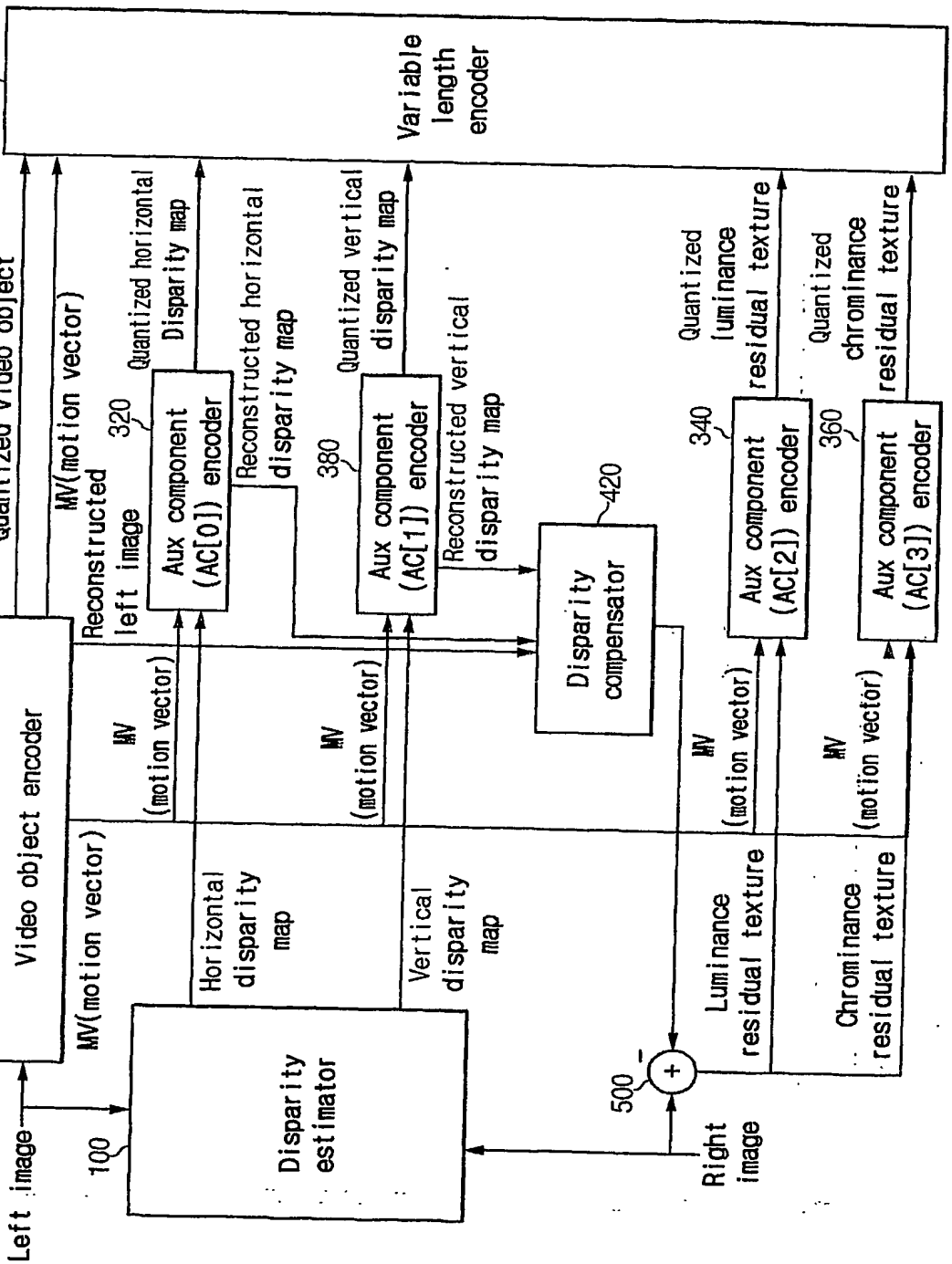

First mb of video object (left image)
First mb of AC[0] (HDM)
First mb of AC[1] (VDM)
First mb of AC[2] (LRT)
Second mb of video object (left image)
Second mb of AC[0] (HDM)
Second mb of AC[1] (VDM)
Second mb of AC[2] (LRT)
...
Nth mb of video object (left image)
Nth mb of AC[0] (HDM)
Nth mb of AC[1] (VDM)
Nth mb of AC[2] (LRT)
-AC: Auxiliary Component
-mb: macroblok
-HDM: Horizontal Disparity Map
-VDM: Vertical Disparity Map
-LRT: Luminance Residual Texture

Fig. 15


Left image
100
Disparity estimator
200
Video object encoder
MV(motion vector)
Horizontal disparity map
Vertical disparity map
MV (motion vector)
MV (motion vector)
MV (motion vector)
MV (motion vector)
Reconstructed left image
Aux component (AC[0]) encoder
320
Quantized horizontal Disparity map
Reconstructed horizontal disparity map
Aux component (AC[1]) encoder
380
Quantized vertical disparity map
Reconstructed vertical disparity map
Disparity compensator
420
Aux component (AC[2]) encoder
340
Quantized luminance residual texture
Aux component (AC[3]) encoder
360
Quantized chrominance residual texture
Quantized video object
MV(motion vector)
600
Variable length encoder
500
Right image
Luminance residual texture
Chrominance residual texture

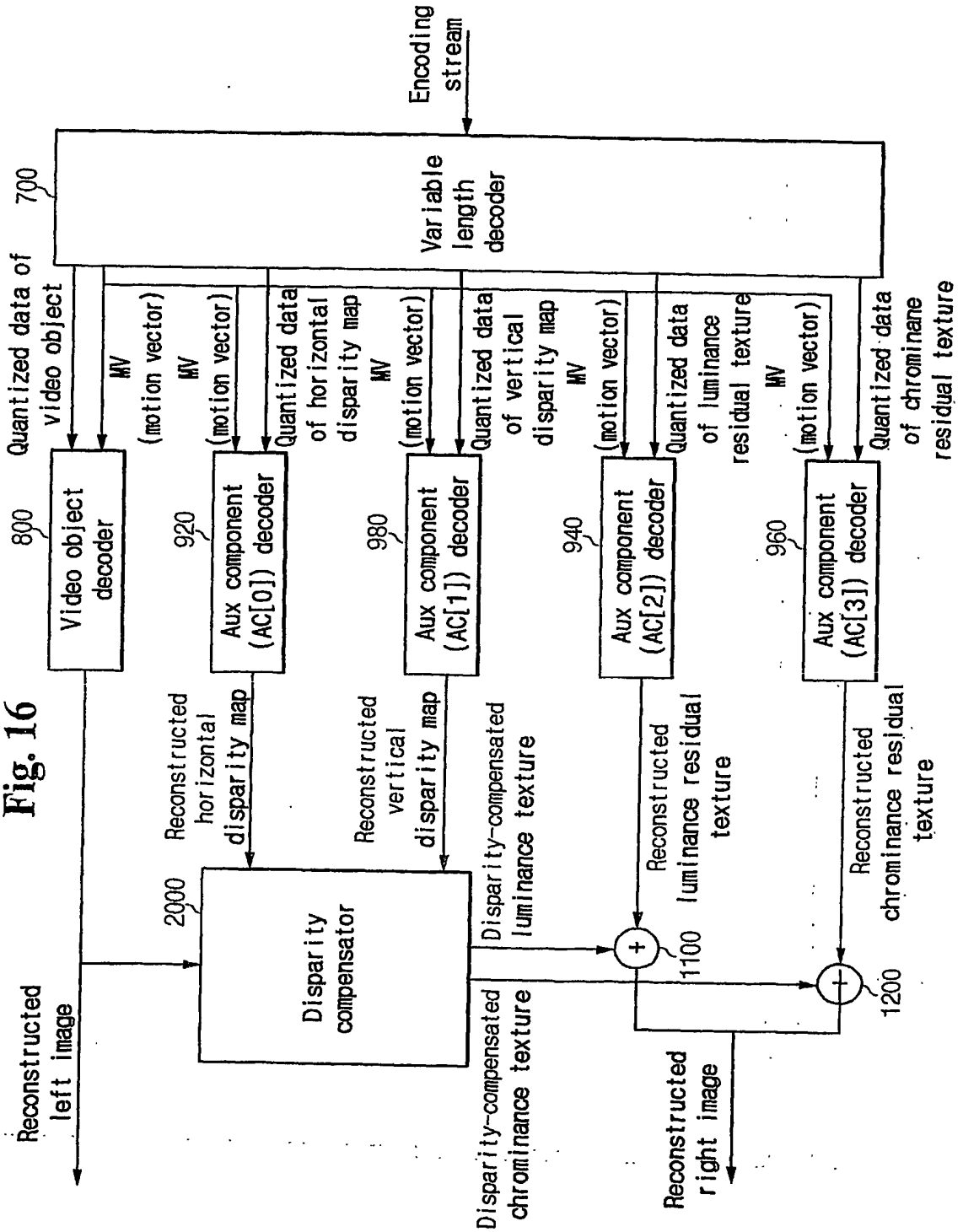

Encoding stream
700
Variable length decoder
Quantized data of video object
MV (motion vector)
MV (motion vector)
Quantized data of horizontal disparity map
MV (motion vector)
Quantized data of vertical disparity map
MV (motion vector)
Quantized data of luminance residual texture
MV (motion vector)
Quantized data of chrominane residual texture
800
Video object decoder
920
Aux component (AC[0]) decoder
980
Aux component (AC[1]) decoder
940
Aux component (AC[2]) decoder
960
Aux component (AC[3]) decoder
Reconstructed horizontal disparity map
Reconstructed vertical disparity map
Disparity-compensated luminance texture
Reconstructed luminance residual texture
Reconstructed chrominance residual texture
2000
Disparity compensator
1100
1200
Reconstructed left image
Disparity-compensated chrominance texture
Reconstructed right image

Fig. 16

Fig. 17

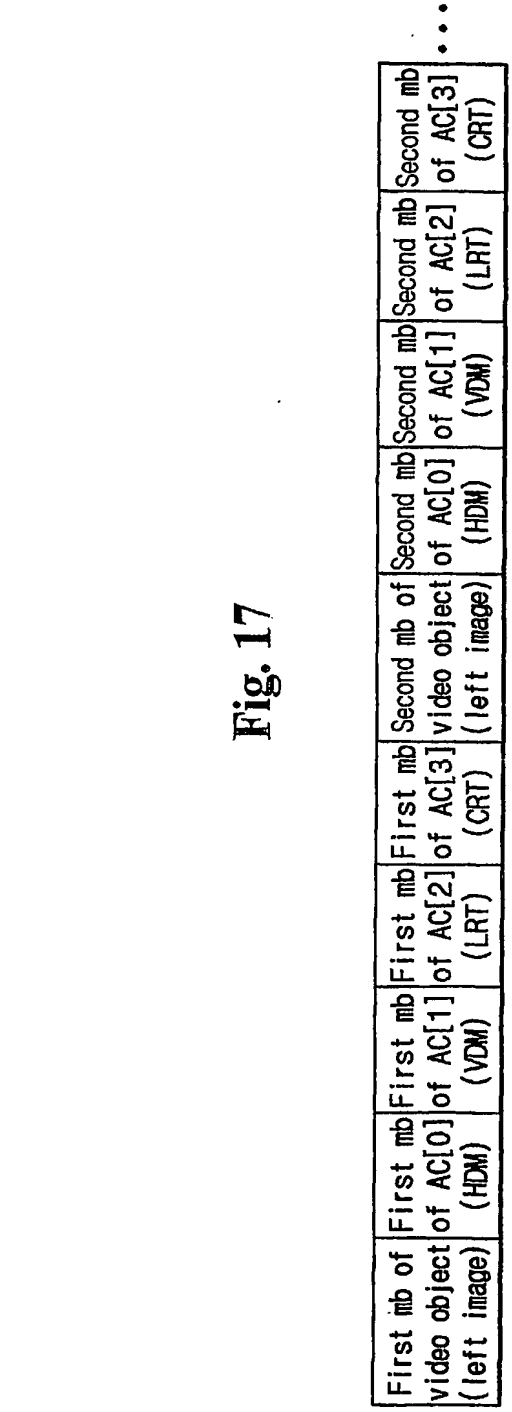

First mb of video object (left image)
First mb of AC[0] (HDM)
First mb of AC[1] (VDM)
First mb of AC[2] (LRT)
First mb of AC[3] (CRT)
Second mb of video object (left image)
Second mb of AC[0] (HDM)
Second mb of AC[1] (VDM)
Second mb of AC[2] (LRT)
Second mb of AC[3] (CRT)
Nth mb of video object (left image)
Nth mb of AC[0] (HDM)
Nth mb of AC[1] (VDM)
Nth mb of AC[2] (LRT)
Nth mb of AC[3] (CRT)
-AC: Auxiliary Component
-mb: macroblok
-HDM: Horizontal Disparity Map
-VDM: Vertical Disparity Map
-LRT: Luminance Residual Texture
-CRT: Chrominance Residual Texture

Fig. 18

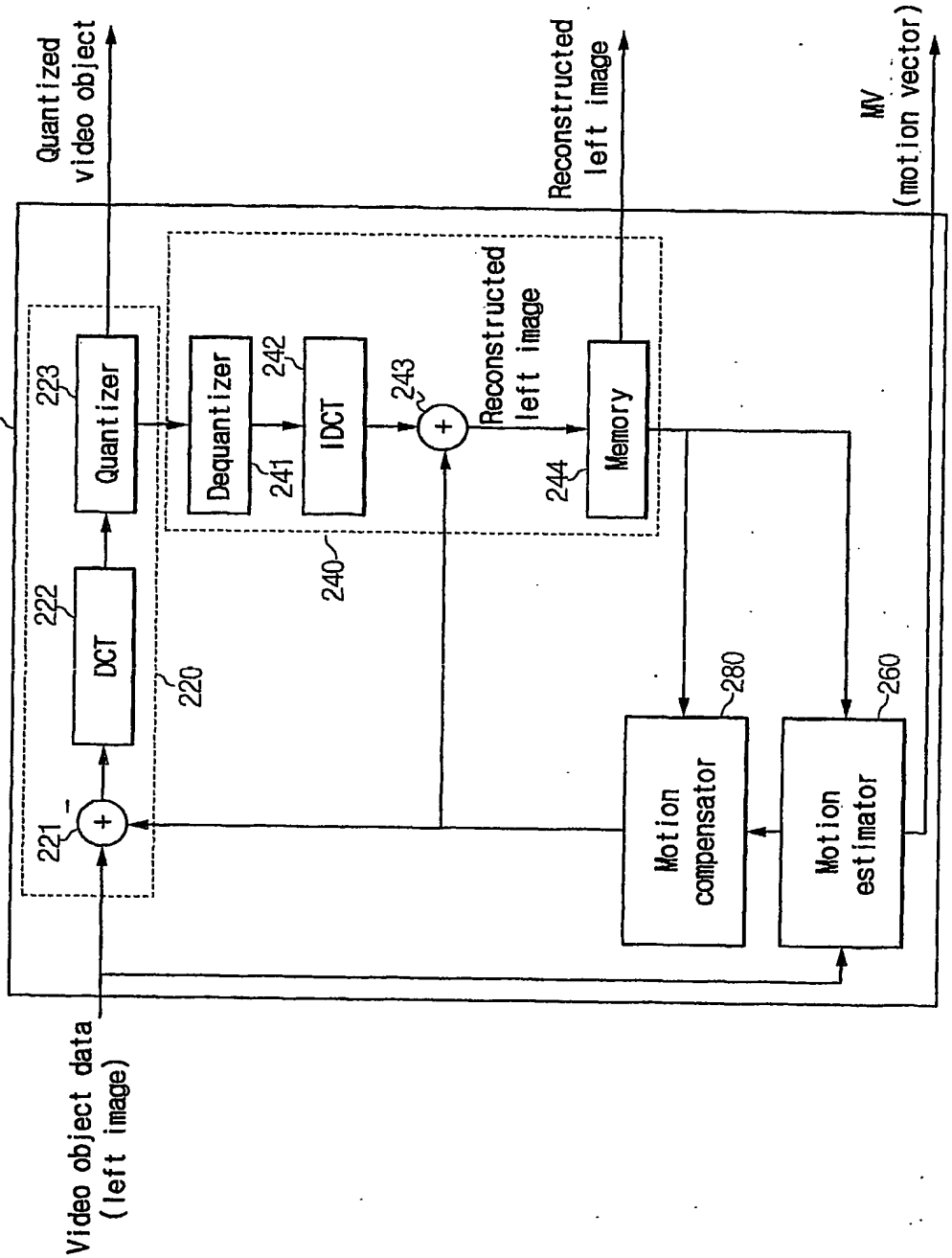

Quantized video object
Reconstructed left image
MV (motion vector)
200
223
Quantizer
Dequantizer
242
IDCT
243
Reconstructed left image
Memory
241
244
240
222
DCT
220
221
Motion compensator
280
Motion estimator
260
Video object data (left image)

Fig. 19

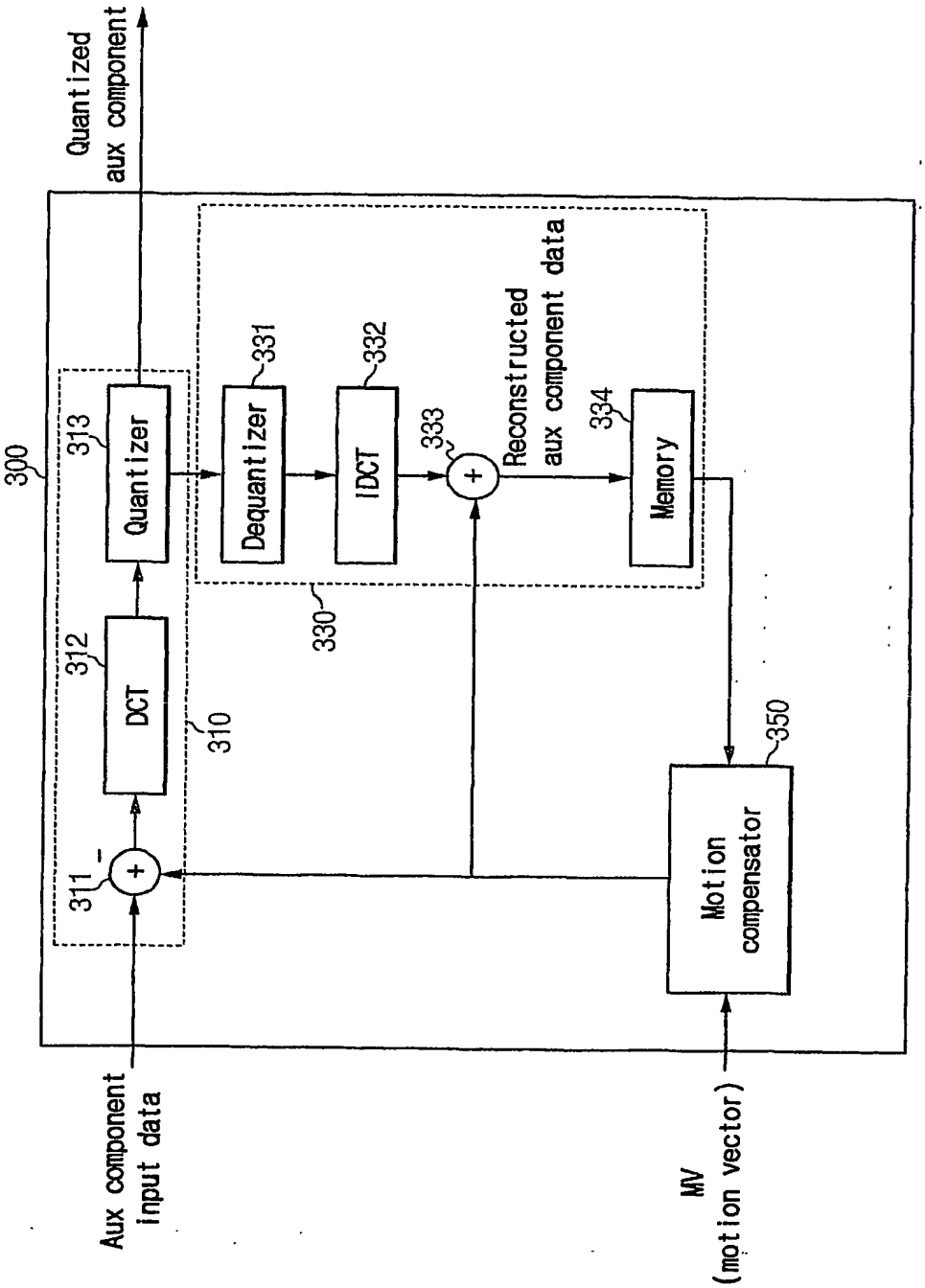

Quantized aux component
300
313
Quantizer
331
Dequantizer
332
IDCT
333
Reconstructed aux component data
334
Memory
330
312
DCT
310
311
350
Motion compensator
Aux component input data
MV (motion vector)

Fig. 20

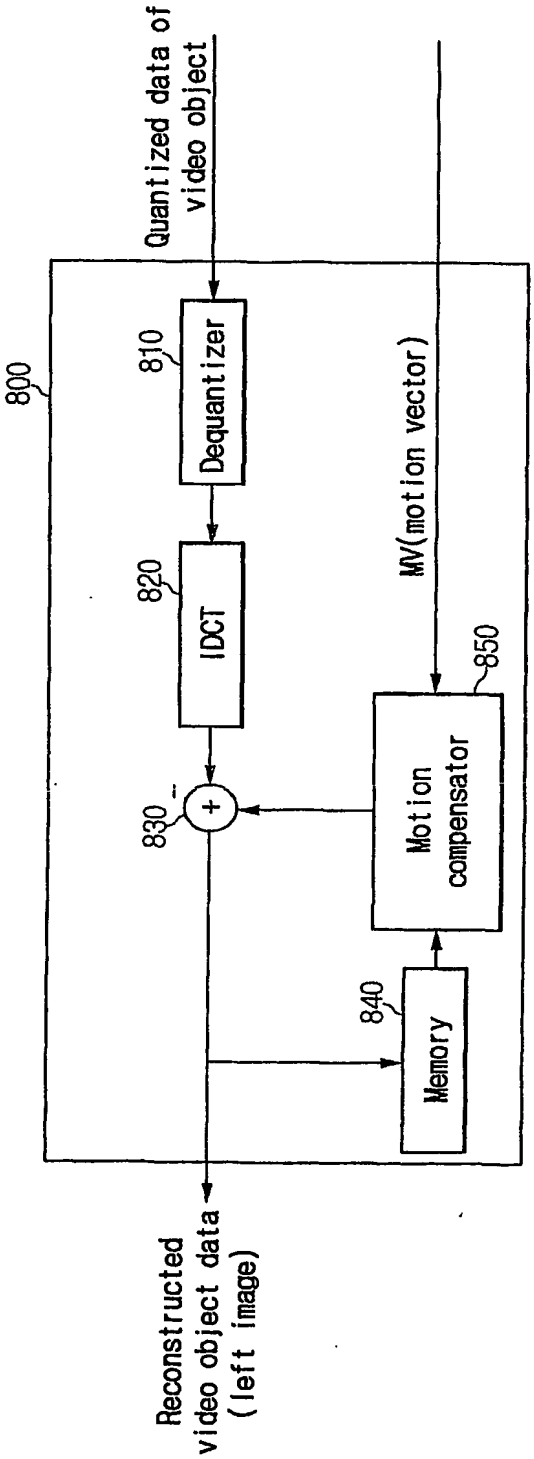
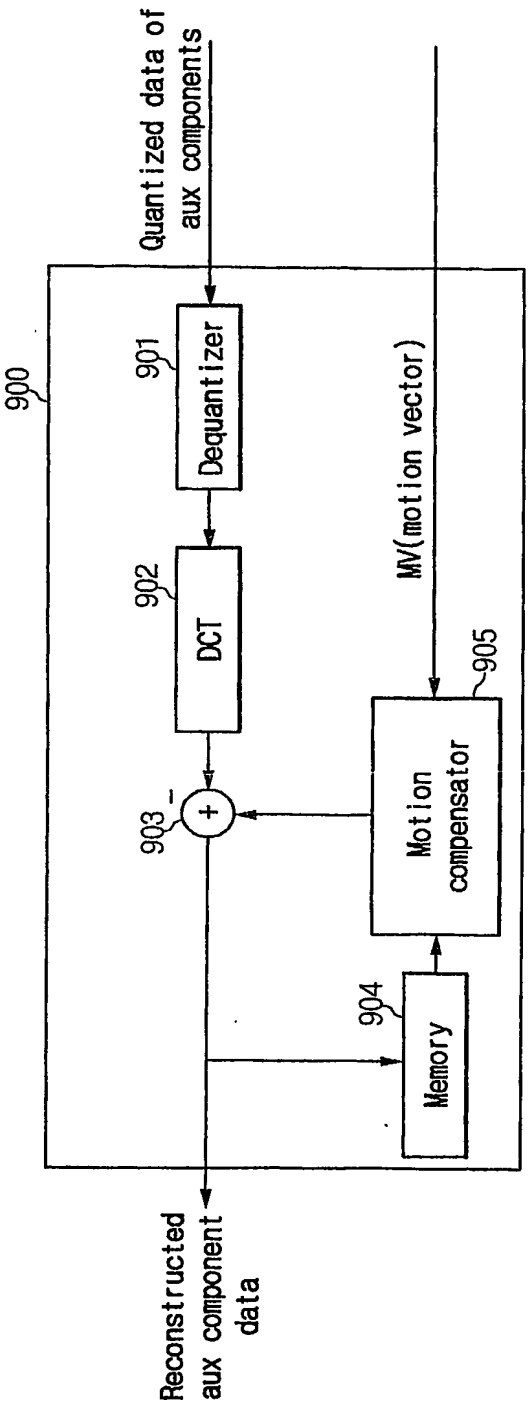

Quantized data of video object
800
810
Dequantizer
820
IDCT
830
+
-
MV(motion vector)
850
Motion compensator
840
Memory
Reconstructed video object data (left image)

Fig. 21


Quantized data of aux components
900
901
Dequantizer
902
DCT
903
+
-
MV(motion vector)
905
Motion compensator
904
Memory
Reconstructed aux component data